REMARKS

Claims 1-13 are pending in this application. By this Amendment, claims 1, 3-5, 7, 8 and 10-12 are amended. Applicant gratefully acknowledges that the Final Office Action indicates claims 3-6 and 10-13 include allowable subject matter.

I. Information Disclosure Statement

An Information Disclosure Statement with Form PTO-1449 was filed in the above-captioned patent application on April 15, 2003. Applicants have not yet received from the Examiner a copy of the Form PTO-1449 initialed to acknowledge the fact that the Examiner has considered all of the disclosed information. The Examiner is requested to initial each reference and return to the undersigned a copy of the Form PTO-1449. A copy of Form PTO-1449 filed April 15, 2003 is attached for the Examiner's convenience.

II. Response to Double-Patenting Rejection

The Office Action provisionally rejects claims 1-7 under 35 U.S.C. §101 as claiming the same invention as that of claims 1-2 and 5-9 of the co-pending Application No. 10/201,775; and claims 8-13 under the judicially created doctrine of obviousness-type double-patenting as unpatentable over claims 12-19 of co-pending Application No. 10/201,775. These rejections are respectfully traversed.

Claims 1, 3-5, 7, 8 and 10-12 are amended. Accordingly, the double patenting rejection of claims 1-13 should be withdrawn.

III. The Claims Define Patentable Subject Matter

Claims 1-2, and 7-9 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,480,202 to Deguchi in view of U.S. Patent No. 5,956,004 to Hush. This rejection is respectfully traversed.

Hush Teaches Away From the Present Invention

In the Response to Arguments section, the Office Action asserts that "the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of a primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." The Office Action properly states that the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

However, Applicant did not argue in the July 28, 2003 Request for Reconsideration that the features of a secondary reference may not be bodily incorporated into the structure of a primary reference. Instead, the Applicant argued that Hush teaches away from the modification proposed in the Office Action in view of Deguchi.

MPEP §2143 states that "to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge readily available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations." Furthermore, the proposed modification cannot render the prior art unsatisfactory for its intended purpose. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See MPEP §2143.01.

Applicant argues that Hush teaches away from the use of using gray scale range of brightness on LCDs or CRTs, because Hush states that CRTs have the drawback of being relatively bulky and power hungry. Furthermore, Hush states that LCD devices provide poor contrast. Furthermore, Hush states that LCDs only offer a limited angular display range.

Moreover, Hush states that color LCD devices consume power at rates incompatible with extended battery operation, and that LCDs are far more costly than CRTs. In light of the above-identified shortcomings, LCDs and CRTs would render Hush unsatisfactory for its intended purposes of: providing a gray scale generator which requires less circuitry; to provide a gray scale generator which requires less surface area on a silicone die; to provide a gray scale generator which requires less power consumption; and to provide a gray scale generator that is simpler to manufacture (see Hush, column 1, line 23 - column 2, line 20).

Applicant respectfully reminds the Examiner that a prima facie case of obviousness can be rebutted if the Applicant can show that the art in any material respect "teaches away" from the claimed invention. The reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be led in a direction divergent from the path that was taken by the Applicant. See MPEP §1504.03 III.

Upon reading Hush, a person of ordinary skill in the art would be led away from combining Hush with Deguchi because Deguchi is directed towards processing color images on a standard CRT or an LCD, whereas Hush teaches against CRTs and LCDs.

The Applied Art Fails to Disclose all of the Features of the Present Invention

Furthermore, Deguchi fails to disclose, teach or suggest "to increase an output value in at least a lower grayscale range" as recited in claims 1, 7 and 8.

Deguchi discloses in Figs. 7A and 7B graphs illustrating the input and output characteristics of the display equipment. Deguchi discloses,

> "Additionally, as seen from Fig. 7A, the TRC brightness will increase (shift from curve a to curve b) when ambient light is present. In Fig. 7A, the horizontal axis represents the value of the normalized input digital signal (or the value of the input digital signal divided by the value of the maximum input digital signal of the monitor) and the vertical axis represent the output brightness of the monitor.

> Fig. 7B is a graph obtained by normalizing the vertical axis of Fig. 7A by the value of the maximum brightness. As seen from Fig. 7B, the monitor shows a narrower dynamic range (D2<D1) when ambient light is present (and its performance reflects curve b' with a dynamic range of D2) than when ambient light is not found (and its performance reflects curve a' with a dynamic range of D1)." (col. 4, lines 3-16).

As discussed above, Fig. 7A indicates the input and output characteristics shown by the curve a. Fig. 7B illustrates a case in which the display equipment (the characteristic of which is shown by the curve a) is in the presence of ambient light. The output brightness increases relative to how much ambient light exists, and the increase in the output brightness is shown by the curve b.

Thus, Deguchi discloses in curve b the sum of ambient light and the output brightness under the influence of ambient light. Deguchi does not disclose both reducing and increasing output brightness for correcting the colors. In this case, the characteristic of the display equipment stays the same as shown by the curve a.

As such, Deguchi fails to disclose "to increase an output value in at least a lower gray scale range", in either Figs. 7A or 7B. Thus, Figs. 7A and 7B fail to teach or suggest the features of claims 1, 7 and 8.

Figs. 11A to 11C of Deguchi illustrate modifying the colors of the images by reducing the brightness of the colors output by the display equipment. Deguchi discloses,

> "For example, if the curve a of Fig. 11A is one of the TRCs for the monitor 103 obtained when no ambient light exists (in the dark), the TRC is shifted to curve b in Fig. 11B when the monitor 103 is placed in an environment where ambient light exists. Thus, in this embodiment, a processing operation will be performed so as to make the TRC (curve c) obtained after the correction to be found closer to the TRC (curve a) obtained in the dark as shown in Fig. 11C." (col. 8, line 62 – col. 9, line 2)

As discussed above, Fig. 11A of Deguchi indicates the input and output characteristics shown by the curve a. Fig. 11B of Deguchi illustrates a case in which the display equipment

(the characteristic of which is shown by the curve a) is placed in the presence of ambient light. The output brightness increases relative to how much ambient light exists and the increase in the output brightness is shown by the curve b. Fig. 11C of Deguchi shows how the output of the entire image is reduced as shown by the curves b and c, in order to modify the influence of ambient light (that is, in an effort to obtain intrinsic input and output characteristics of the display equipment shown by the curve a).

Consequently, Deguchi teaches that the sum of ambient light and output brightness is increased under the influence of ambient light. However, this does not mean that the output brightness is increased for correcting the colors. In fact, Fig. 11C of Deguchi shows reducing output brightness in order to achieve the intrinsic input and output characteristics of the display equipment.

Claims 1, 7 and 8 of the present application, on the other hand, recite increasing an output value of an image signal in a lower grayscale range which reproduces proper colors unaffected by ambient light. Thus, Figs. 11A - 11C also fail to teach or suggest all of the features of claims 1, 7 and 8.

Hush also fails to describe, teach or suggest "to increase an output value in at least a lower grayscale range," as recited in claims 1, 7 and 8. Figs. 4A to 4D of Hush merely disclose varying the output over time, but not increasing an output value in a lower grayscale range when the environment is affected by ambient light.

As such, neither Deguchi nor Hush describe, teach or suggest "to increase an output value in at least a lower grayscale range," as recited in claims 1, 7 and 8. Moreover, Deguchi fails to describe, teach or suggest grayscale range as explicitly recognized by the Office Action. Furthermore, it is respectfully submitted that the Office Action fails to particularly show where Deguchi discloses to increase an output value in at least a lower gray scale range when the environment is affected by ambient light.

With respect to claim 2, in the Response to Arguments Section, the Office Action asserts that Figures 4A-4C of Hush disclose different ranges of gray scale levels, and therefore, must also disclose parameters that differ between the lower gray scale range and the gray scale range other than the lower gray scale range, as recited in claim 2. Applicant respectfully disagrees.

Hush requires that in order to achieve illumination on the FED device, an analog signal input 45 is transformed into an output width signal 51 by means of gray scale generator 55 (see Hush, col. 3, lines 38-41). In one embodiment of Hush, a pixel driver 75 is coupled to gray scale generator 55. A sawtooth output signal 72 of generator 55 is input into driver 75. Pixel driver 75 serves a functional purpose of generating a pulse width output signal 51. This purpose is achieved by comparing the sawtooth output 72 with a predetermined threshold (col. 4, lines 23-30). As the threshold is predetermined, and therefore of a singular value, Hush teaches away from using parameters that differ between a lower gray scale range and a gray scale range other than a lower gray scale range, as recited in claim 2.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-13 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Attachments:
Copy of Form PTO-1449 filed April 15, 2003

Date: February 10, 2004

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